



Bulletin No. 11

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## Statewide Mercury Hair Biomonitoring Program

Mercury occurs naturally in the environment and accumulates in fish and marine mammals. It is released into the air through coal burning and industrial pollution and reaches the Arctic primarily through air and water currents. While human exposure to mercury can occur several ways, in Alaska exposure is primarily through eating fish or marine mammals.

In 2001 the U.S. Environmental Protection Agency (USEPA) and U.S. Food and Drug Administration (USFDA) issued national fish advisories advising women of childbearing age to restrict consumption of fish. These advisories, which were not based upon data on mercury levels in fish from Alaska, caused considerable concern among Alaskans over the possible risks of fish consumption, particularly to pregnant women and their developing fetuses.

In response, the Alaska Division of Public Health (DPH) convened an expert panel\* to review existing data on the levels of mercury in Alaska fish and humans and to provide dietary guidance to Alaskans.

Mercury levels are very low in the most frequently consumed fish from Alaska; the levels found in Alaska salmon are among the lowest documented. The FDA subsequently acknowledged that mercury levels in Alaska fish are far below the average levels upon which it issued its advisory. As a result, the FDA recommended that consumers contact local health authorities for specific consumption recommendations.

After reviewing all of the information, the panel unanimously endorsed continued unrestricted consumption of Alaska seafood. DPH and members of the panel\* strongly recommend that all Alaskans, including pregnant women, women who are breast-feeding, women of childbearing age, and young children continue unrestricted consumption of fish from Alaskan waters.

This consumption advice was developed as a collaborative effort among scientists, health policy makers, and community leaders working together to develop specific advice based on Alaska-specific data in a manner that is respectful of cultural and social issues and of maximum benefit to the health of local consumers. The process utilized was one of consensus, based on science, and the scientists and board members of the 10 partner organizations endorsed the advice.

Because scientists continue to argue over the potential adverse effects of mercury exposure from fish consumption, concerns remain among many Alaskans. In order to validate current Alaska public health recommendations regarding fish consumption, the DPH has implemented a statewide, free, and confidential biomonitoring program for women of childbearing age who harbor concerns regarding mercury exposure. Due to budget constraints and because the greatest risk is to the fetus, the initial stage of the biomonitoring program will be limited to pregnant women. This public health program involves collection of a small sample of hair and measuring the level of mercury in the hair sample.

Mercury is incorporated into hair as it grows and remains in hair for a long time. The level of mercury in human hair can provide valuable information about exposure to mercury in the diet. All pregnant women up to and including the time of delivery are eligible to have their health care provider submit a hair sample for mercury testing. The program is voluntary, and the results will be sent to the woman's health care provider. Summary data will be made available on a regular basis. If elevated levels are detected (elevated being levels above the World Health Organization's standard of 10 parts per million), DPH will initiate an epidemiological investigation and make recommendations based on the results of the investigation.

There are no data to suggest that mercury levels in Alaskans pose a health risk. The information gained through this statewide biomonitoring program will provide valuable information and additional reassurance that fish consumption does not pose a health risk for pregnant women. In addition, by comparing levels of mercury in hair samples over time, we will know if mercury levels are changing.

Hair mercury testing is a standardized test and the hair collection method is non-invasive. Women who choose to participate in this program will have a small sample of hair (about 1/8 inch in diameter) collected from the back of the head close to the scalp. The place where the hair is cut should not be noticeable. The Section of Epidemiology will provide the materials necessary for submitting hair samples for analysis. Initially, a contract laboratory in Seattle will analyze hair samples. In the future, as it develops capacity, the State Public Health Laboratory will be performing the analysis.

To participate in the Statewide Hair Mercury Biomonitoring Program and for information on how to collect and submit hair samples contact the Section of Epidemiology, Environmental Public Health Program (907) 269-8000.

\*The expert panel consisted of the following agencies and organizations:

Alaska Department of Environmental Conservation  
Alaska Department of Health and Social Services  
Alaska Native Health Board  
Alaska Native Science Commission  
Alaska Native Tribal Health Consortium  
Aleutian/Pribilof Islands Association, Inc.  
Institute for Circumpolar Health Studies, University of Alaska Anchorage  
North Slope Borough  
University of Alaska Fairbanks  
Yukon Kuskokwim Health Corporation